

**This Page is Inserted by IFW Indexing and Scanning
Operations and is not part of the Official Record**

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ **BLACK BORDERS**
- ☐ **IMAGE CUT OFF AT TOP, BOTTOM OR SIDES**
- ☐ **FADED TEXT OR DRAWING**
- ☐ **BLURRED OR ILLEGIBLE TEXT OR DRAWING**
- ☐ **SKEWED/SLANTED IMAGES**
- ☐ **COLOR OR BLACK AND WHITE PHOTOGRAPHS**
- ☐ **GRAY SCALE DOCUMENTS**
- ☐ **LINES OR MARKS ON ORIGINAL DOCUMENT**
- ☐ **REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY**
- ☐ **OTHER:** _____

IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/732,329	12/06/2000	Siddharth C. Sheth	42390P10218	1465

7590 09/24/2004

Edwin H. Taylor
Blakely, Sokoloff, Taylor & Zafman LLP
Seventh Floor
12400 Wilshire Boulevard
Los Angeles, CA 90025-1030

EXAMINER

LAZARO, DAVID R

ART UNIT PAPER NUMBER

2155

DATE MAILED: 09/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/732,329

Applicant(s)

SHETH ET AL.

Examiner

David Lazaro

Art Unit

2155

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 June 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 June 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is in response to the amendment filed 06/21/04.
2. Claims 1-19 are pending in this Office Action.
3. The Objection to the drawings withdrawn.
4. The Objections to Claims 7 and 12 for lack of consistency are withdrawn.
5. The rejection to Claim 17 under 35 U.S.C. §112, second paragraph, is withdrawn.

Claim Objections

6. With regard to Claims 1-5, 7-10, 13-15 and 17-19, please refer to 37 CFR 1.121(c). Please make note of the proper Status Identifiers for any future amendments. "Presently amended" is not a proper Status Identifier. "Currently amended" is the accepted Status Identifier.

Claim Rejections - 35 USC § 102

7. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
8. Claims 1-5, 7-10, 12-15 and 17-19 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 6,275,861 Chaudri et al. (Chaudri).
9. With respect to Claim 1, Chaudri teaches a method, comprising: identifying a combination of fields in a header (Col. 2 lines 55-58 and Col. 8 lines 4-7) of an internet protocol (hereinafter IP) packet (Col. 2 lines 10-12), wherein the combination is

dynamically modifiable (Col. 4 lines 58-64 and Col. 6 lines 45-49); and utilizing the combination of fields to classify the IP packet (Col. 4 lines 45-47 and Col. 6 lines 22-63).

10. With respect to Claim 2, Chaudri teaches all the limitations of Claim 1 and further teaches a. constructing a key (Col. 5 lines 1-4) according to information in a key construction register (Col. 6 lines 41-49); b. identifying a tag that corresponds to the key from a table of key-tag entries in a memory device (Col. 6 lines 50-63); and c. inserting the tag in the header of IP packet in accordance to information in a tag insertion register (Col. 7 lines 1-5 and lines 14-18).

11. With respect to Claim 3, Chaudri teaches all the limitations of Claim 2 and further teaches the information in the key construction register indicates a retrieval location in the header of IP packet (Col. 4 lines 65-67) and a number of bits from the retrieval location (Col. 4 lines 58-64) to consider in constructing the key (Col. 5 lines 1-3 and Col. 6 lines 41-49).

12. With respect to Claim 4, Chaudri teaches all the limitations of Claim 2 and further teaches the information in the tag insertion register indicates a number of bits to retrieve from the tag (Col. 7 lines 17-18 and Col. 6 line 43) and an insertion location in the header of IP packet to insert the tag (Col. 6 line 44).

13. With respect to Claim 5, Chaudri teaches a broadband engine (Fig. 6) , comprising: a. a transceiver module (Fig. 7, interface between 101 and 104); and b. a lookup module (Fig. 6, 111), coupled to an external processor via an external processor interface (Fig. 6, 104), an external content adjustable memory (Fig. 6, 110) and the transceiver module, further including: a processing core (Fig. 7, 112) to classify an

internet protocol (hereinafter IP) packet (Col. 2 lines 10-12) by utilizing a dynamically modifiable (Col. 4 lines 58-64 and Col. 6 lines 45-49) combination of fields in a header of the IP packet (Col. 2 lines 55-58 and Col. 8 lines 4-7).

14. With respect to Claim 7, Chaudri teaches all the limitations of Claim 5 and further teaches the lookup module further comprising: a. a plurality of registers to contain key construction information and tag insertion information from the external processor (Col. 6 lines 39-49); and b. the processing core to construct a key according to the key construction information (Col. 5 lines 1-4), retrieve a tag that corresponds to the key from the external content adjustable memory (Col. 6 lines 50-62) and insert the tag in a header of one of the packets based on the tag insertion information (Col. 7 lines 1-5 and lines 14-18).

15. With respect to Claim 8, Chaudri teaches all the limitations of Claim 7 and further teaches the key construction information further comprises: a retrieval location in the header of IP packet (Col. 4 lines 65-67) and a number of bits from the retrieval location (Col. 4 lines 58-64) to consider in constructing the key (Col. 5 lines 1-3 and Col. 6 lines 41-49).

16. With respect to Claim 9, Chaudri teaches all the limitations of Claim 7 and further teaches the tag insertion information further comprises: a number of bits to retrieve from the tag (Col. 7 lines 17-18 and Col. 6 line 43) and an insertion location in the header of IP packet to insert the tag (Col. 6 line 44).

17. With respect to Claim 10, Chaudri teaches a line card (Fig. 7, 100), comprising: an input/output interface (Fig. 7, any Port); a switch fabric interface to communicate with

a switch fabric (Fig. 7, 130); and a broadband engine (Fig 6), coupled to the input/output interface and the switch fabric interface, further including: a. a transceiver module to receive a plurality of packets from the input/output interface (Fig. 7, interface between 101 and 104); and b. a lookup module (Fig. 6, 111), coupled to an external content adjustable memory (Fig. 6 110), the transceiver module and an external processor (Fig. 6 104), further including: a processing core (Fig. 7, 112) to classify an internet protocol (hereinafter IP) packet (Col. 2 lines 10-12) by utilizing a dynamically modifiable combination of fields in a header of the IP packet packet (Col. 4 lines 45-47 and lines 58-67, and Col. 6 lines 22-63).

18. With respect to Claim 12, Chaudri teaches all the limitations of Claim 10 and further teaches the lookup module further comprising: a. a plurality of registers to contain key construction information and tag insertion information from the external processor (Col. 6 lines 39-49); and b. the processing core to construct a key according to the key construction information (Col. 5 lines 1-4), retrieve a tag that corresponds to the key from the external content adjustable memory (Col. 6 lines 50-62) and insert the tag in a header of one of the packets based on the tag insertion information (Col. 7 lines 1-5 and lines 14-18).

19. With respect to Claim 13, Chaudri teaches all the limitations of Claim 12 and further teaches the key construction information further comprises: a retrieval location in the header of IP packet (Col. 4 lines 65-67) and a number of bits from the retrieval location (Col. 4 lines 58-64) to consider in constructing the key (Col. 5 lines 1-3 and Col. 6 lines 41-49).

20. With respect to Claim 14, Chaudri teaches all the limitations of Claim 12 and further teaches the tag insertion information further comprises: a number of bits to retrieve from the tag (Col. 7 lines 17-18 and Col. 6 line 43) and an insertion location in the header of IP packet to insert the tag (Col. 6 line 44).

21. With respect to Claim 15, Chaudri teaches a communication system (Col. 1 lines 19-20), comprising: a. a switch fabric (Fig. 7, 130); b. a main processing engine with an processor (Fig. 7, 104); and c. a line card, coupled to the switch fabric via a switch fabric interface (Fig. 7, 130), further including: an input/output interface (Fig. 7, Ports 1-4); a broadband engine (Fig. 6), coupled to the input/output interface and the switch fabric interface, further comprising: i. a transceiver module to receive a plurality of packets from the input/output interface (Fig. 7, interface between 101 and 104); and ii. a lookup module (Fig. 6, 111), coupled to an external content adjustable memory (Fig. 6, 110), the transceiver module and the processor, further including: a processing core (Fig. 7, 112) to classify an internet protocol (hereinafter IP) packet (Col. 2 lines 10-12) by utilizing a dynamically modifiable (Col. 4 lines 58-64 and Col. 6 lines 45-49) combination of fields in a header of the IP packet (Col. 2 lines 55-58 and Col. 8 lines 4-7).

22. With respect to Claim 17, Chaudri teaches all the limitations of Claim 15 and further teaches the lookup module further comprising: a. a plurality of registers to contain key construction information and tag insertion information from an external central processing unit (Col. 6 lines 39-49); and b. the processing core to construct a key according to the key construction information (Col. 5 lines 1-4), retrieve a tag that

corresponds to the key from the external content adjustable memory (Col. 6 lines 50-62) and insert the tag in a header of one of the packets based on the tag insertion information (Col. 7 lines 1-5 and lines 14-18).

23. With respect to Claim 18, Chaudri teaches all the limitations of Claim 17 and further teaches the key construction information further comprises: a retrieval location in the header of IP packet (Col. 4 lines 65-67) and a number of bits from the retrieval location (Col. 4 lines 58-64) to consider in constructing the key (Col. 5 lines 1-3 and Col. 6 lines 41-49).

24. With respect to Claim 19, Chaudri teaches all the limitations of Claim 17 and further teaches the tag insertion information further comprises: a number of bits to retrieve from the tag (Col. 7 lines 17-18 and Col. 6 line 43) and an insertion location in the header of IP packet to insert the tag (Col. 6 line 44).

Claim Rejections - 35 USC § 103

25. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

26. Claim 6, 11, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chaudri in view of U.S. Patent 6,611,875 by Chopra et al. (Chopra).

27. With respect to Claim 6, Chaudri teaches all the limitations of Claim 5 and further teaches the transceiver module further collections a portion of incoming packets (Col. 5 line 9-11). Chaudri does not explicitly disclose the transceiver appends control information. Chopra teaches a transceiver module that appends control information to a

collected portion of an incoming packet (Col 8 lines 41-48 and lines 58-65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to take the engine disclosed by Chaudri and modify it as indicated by Chopra such that the transceiver module further appends control information to the collected portion. One would be motivated to have this as it insures internal processing is controlled more efficiently (Col. 7 lines 55-67).

28. With respect to Claim 11, Chaudri teaches all the limitations of Claim 10 and further teaches the transceiver module further collections a portion of incoming packets (Col. 5 line 9-11). Chaudri does not explicitly disclose the transceiver appends control information. Chopra teaches a transceiver module that appends control information to a collected portion of an incoming packet (Col 8 lines 41-48 and lines 58-65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to take the line card disclosed by Chaudri and modify it as indicated by Chopra such that the transceiver module further appends control information to the collected portion. One would be motivated to have this as it insures internal processing is controlled more efficiently (Col. 7 lines 55-67).

29. With respect to Claim 16, Chaudri teaches all the limitations of Claim 15 and further teaches the transceiver module further collections a portion of incoming packets (Col. 5 line 9-11). Chaudri does not explicitly disclose the transceiver appends control information. Chopra teaches a transceiver module that appends control information to a collected portion of an incoming packet (Col 8 lines 41-48 and lines 58-65). It would have been obvious to one of ordinary skill in the art at the time the invention was made

to take the system disclosed by Chaudri and modify it as indicated by Chopra such that the transceiver module further appends control information to the collected portion. One would be motivated to have this as it insures internal processing is controlled more efficiently (Col. 7 lines 55-67).

Response to Arguments

30. Applicant's arguments filed 06/21/04 have been fully considered but they are not persuasive.

31. In general the Applicants' arguments are focused on the claim limitation "wherein the combination is dynamically modifiable" (from claim 1) and "by utilizing a dynamically modifiable combination of fields in a header of the IP packet" (from claim 5), and how the 'alterable registers/parameters' taught by Chaudri are not dynamically modifiable. Applicants state on Page 13 of the Remarks, "*Nowhere does Chaudri disclose, teach or suggest that alterable registers are dynamically alterable (emphasis added).*"

a. The Examiner first makes reference to the MPEP 2106[R-2].II.C., which states, "Office personnel are to give claims their broadest reasonable interpretation in light of the supporting disclosure. In re Morris, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997)." Taking this into consideration, the Examiner interprets the limitation 'the combination is dynamically modifiable' to generally mean the combination of fields to be used in identifying/classifying can be changed for whatever reason. The same field or fields do not have to be used every time, and a change in the combination of

fields allows for different classification processes. This interpretation seems reasonable based on the supporting disclosure such as the lines cited by the Applicants on Page 13 of the Remarks (The examiner notes the lines actually come from pages 5 and 6 of the Specification). Furthermore, the Examiner interprets "dynamically alterable" as capable of being programmed in order to have a different classification process. This is based on the description given in the last paragraph on page 12 of the Applicants' specification.

b. Based on this interpretation, the examiner asserts the use of 'alterable registers' (also referred to as 'parameters') as taught by Chaudri would be within the scope of the limitations regarding the dynamic modification of a combination of header fields. The search function of Chaudri is part of the classification process and makes use of 'alterable registers' (Col. 6 lines 45-49 and Col. 3 lines 50-55). The 'alterable registers' of Chaudri include the 'offset' and 'mask' parameters. The offset and the mask determine the combination of fields (Col. 4 lines 58-64). Chaudri identifies the parameters/registers as 'alterable' (Col. 6 lines 45-49). The word alterable itself means capable of being changed or modified. This means the combination of fields can be changed in the system taught by Chaudri. Based on that common meaning alone, it would be reasonable to interpret 'alterable registers' including the combination of fields as being 'dynamically modifiable'. However, Chaudri provides further evidence that the combination of fields is dynamically modifiable.

c. For instance, in Col. 6 lines 18-21, Chaudri states that the invention allows the classification process to be “programmably configurable through setting data in the search memory and in the FLOW_ID data structure”. The configurable data includes the data found in the ‘alterable registers’, which includes the combination of fields to be used (Col. 6 lines 39-44 and Col. 4 lines 58-64). As the registers are “programmably configurable”, they can be considered “dynamically alterable”. This allows different classification processes to be configured based on different combinations of fields. In fact, one of the primary motivations for the invention of Chaudri is to allow “the operation of the routing function and flow assignment [to] be specified and configured programmably so that it can be easily changed and can flexibly respond to different requirements of different network protocol layers” (Col. 3 lines 35-43). Chaudri recognized the need for not only different classification processes, but also the ability to “easily change” between different classification processes. The abstract further supports this as it states “Flexibility is achieved by allowing parameters of the search routine to be specified in memory which can be programmably altered.” The “search routine” is the classification process and the “parameters” include the combination of fields as stored in the ‘alterable registers’. Since they can be “programmably altered”, the ‘alterable registers’ are “dynamically alterable”. Thus Chaudri teaches the combination of fields is dynamically modifiable as interpreted by the Examiner.

Conclusion

32. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Lazaro whose telephone number is 703-305-4868 (571-272-3986 after October 27). The examiner can normally be reached on 8:30-5:00 M-F.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hosain Alam can be reached on 703-308-6662. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2155

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



David Lazaro
September 22, 2004



HOSAIN ALAM
SUPERVISORY PATENT EXAMINER